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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

CZEKAJ, DAVID J

ART UNIT PAPER NUMBER

2613

DATE MAILED: 06/18/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/671,957

Applicant(s)

CHEN, INCHING

Examiner

Dave Czekaj

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13-18 and 30-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-14, 16-18, and 30-38 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

The applicant's amendment along with the cancellation of claims has placed the remaining claims in condition for review.

Drawings

1. The drawings are objected to because:

In figure 10, the examiner could not determine what line 1010 is pointing to.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 3, lines 3 and 5, the examiner understood "macroblocks 105" to be "macroblocks 107".

On page 6, line 17, item 210 is not labeled in the figure.

On page 9, line 15, the examiner understood "block 608" to be "block 708".

On page 9, line 16, the examiner understood "block 709" to be "block 705".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 13, 16-18, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dekel et al. (6314452), (hereinafter referred to as "Dekel") in view of Das et al. (5896176), (hereinafter referred to as "Das").

Regarding claims 1 and 30, Dekel discloses an apparatus that transmits images over low-speed communication channels (Dekel: column 1, lines 7-13). This apparatus comprises "defining a spatial location across a series of pictures of a stream" (Dekel: figure 2, column 4, lines 30-36, wherein the spatial location is the region of interest). However this apparatus lacks partially decoding the picture to determine an area falling within the spatial location as claimed. Das teaches that using region of interests approach where the picture is partially

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decoded to determine the area falling within the spatial location increases video quality (Das: figures 5a-5g, column 12, lines 9-19, wherein the partial decoding is the decomposition, the spatial location is the region of interest, the area within the region of interest is designated by the 0's and 1's). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Dekel and add the decoding taught by Das in order to obtain an apparatus that improves video quality.

Regarding claims 2 and 31, Dekel discloses "fully decoding at least the spatial location in the picture, but not all the picture" (Dekel: column 2, lines 9-10, wherein the spatial location is the region of interest (ROI)).

Regarding claims 3 and 32, Das discloses "forming a plurality of substreams from the partially decoded stream" (Das: column 14, lines 23-35, wherein the person is the region of interest which would generate a partially decoded stream, the plurality of substreams are the bit streams).

Regarding claim 13, Dekel discloses "decoding a picture from a stream" (Dekel: column 8, lines 62-64), "selecting a region of interest in the picture" (Dekel: figure 2, column 4, lines 30-36), "constructing a new picture corresponding to the region of interest" (Dekel: figure 2, column 5, lines 24-32, wherein the new picture is the data sent back to the client corresponding to the ROI), "transmitting the new picture to a node" (Dekel: figure 2, wherein the node is the client) and "commanding the node to display the picture" (Dekel: column 20, lines 28-33, wherein the pictures are displayed).

Regarding claim 16, Das discloses "the regions of interest are different spatial locations of the picture which form the picture when combined" (Das: figure 5d, wherein the different spatial locations are the numbers inside the region, which form the picture when combined).

Regarding claim 17, Das discloses "the regions of interest are overlapping areas of the picture which from the picture when combined" (Das: figure 5d, wherein the overlapping areas are the boundary areas).

Regarding claim 18, Dekel discloses "commanding a second node to display a second new picture from the picture in synchronization with the display of the new picture" (Dekel: figure 1, wherein the second node is the second client).

5. Claims 4-6 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (5557332), (hereinafter referred to as "Koyanagi") in view of Das et al. (5896176), (hereinafter referred to as "Das").

Regarding claims 4 and 33, Koyanagi discloses an apparatus for parallel decoding prediction-coded video signals (Koyanagi: column 1, lines 10-12). This apparatus comprises "decoding a picture into a plurality of slices having a set of slices at least partially within an area of the picture" (Koyanagi: column 6, lines 34-45, wherein the set of slices are the set of three slices which are decoded (the second, sixth, and tenth slice)), "decoding the set of slices into a plurality of macroblocks" (Koyanagi: figure 2), and "decoding the macroblocks into pixels" (Koyanagi: column 10, lines 50-55). However, this apparatus lacks not decoding

the plurality of slices as claimed. Das teaches that using region of interests approach where the picture is partially decoded to determine the area falling within the spatial location increases video quality (Das: figures 5a-5g, column 12, lines 9-19, wherein the partial decoding is the decomposition, the spatial location is the region of interest, the area within the region of interest is designated by the 0's and 1's. The examiner notes that image data contains slices which are well known in the MPEG environment. By partially decoding the image, only a set of the slices are being decoded). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Koyanagi and add the decoding taught by Das in order to obtain an apparatus that improves video quality.

Regarding claims 5 and 34, Das discloses "the area is a region of interest" (Das: column 12, lines 9-10).

Regarding claims 6 and 35, Koyanagi discloses "displaying the decoded set of macroblocks" (Koyanagi: figure 15, item 124).

6. Claims 7-9 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishnamurthy et al. (6496607), (hereinafter referred to as "Krishnamurthy").

Regarding claims 7 and 36, Krishnamurthy discloses an apparatus that identifies and uses regions of interest to provide functionalities (Krishnamurthy: column 1, lines 8-12). This apparatus comprises "creating and transmitting a substream from a stream, the substream corresponding to a region of interest" (Krishnamurthy: figure 1, column 4, lines 32-67 – column 5, lines 1-17, wherein

the stream is the input sequence. Although Krishnamurthy uses the term input sequence instead of stream, the examiner notes that there are many terms in the art that could have been used to describe an input sequence such as data stream, stream, input stream, ect). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a name that best situates to the user).

Regarding claims 8 and 37, Krishnamurthy discloses "synchronizing display of the substream with a second substream" (Krishnamurthy: figures 1 and 4, column 6, lines 39-44, wherein the buffers synchronize many streams).

Regarding claims 9 and 38, Krishnamurthy discloses "the creation and transmission of the substreams are performed in a lock step manner" (Krishnamurthy: figures 1-3, column 4, lines 32-67 – column 5, lines 1-17, wherein the lock-step manner is the creation and synchronization).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dekel et al. (6314452), (hereinafter referred to as "Dekel") in view of Das et al. (5896176), (hereinafter referred to as "Das") in further view of Koyanagi et al. (5557332), (hereinafter referred to as "Koyanagi").

Regarding claim 14, note the examiners rejection for claims 1 and 13, and in addition, claim 14 differs from claims 1 and 13 in that claim 14 further requires decoding an I picture, storing the macroblocks in a plurality of data structures, and forming a new I-frame as claimed. Koyanagi teaches that prior art compression systems have a variation in the quality of the reproduced picture

(Koyanagi: column 2, lines 30-44). To help alleviate this and other problems, Koyanagi discloses an apparatus that "decodes an I-frame into macroblocks" (Koyanagi: figure 2, column 6, lines 34-51, wherein the slices can contain I-frames which is well known in the MPEG environment), "stores the plurality of macroblocks into a plurality of data structures, each of the data structures corresponding to a different one of the regions of interest" (Koyanagi: figure 1, column 6, lines 34-45, wherein the data structures are the buffers, the regions of interest are the sets of slices), and "forms a new I-frame from the macroblocks stored in the data structures" (Koyanagi: figures 8A-8C, wherein the new picture formed could be an I-frame which is well known in the MPEG environment). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Dekel, add the decoding taught by Das, and add the system taught by Koyanagi in order to obtain an apparatus that improves video quality.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

| | | |
|------------|---------|--------------------|
| US-6683987 | 01-2004 | Sugahara, Takayuki |
| US-6507618 | 01-2003 | Wee et al. |
| US-6141453 | 10-2000 | Banham et al. |
| US-5767797 | 06-1998 | Yogeshwar et al. |
| US-6560285 | 05-2003 | Reitmeier et al. |


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US-6577679 06-2003 Apostolopoulos, John G.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (703) 305-3418. The examiner can normally be reached on Monday - Friday 9 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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